Department of Energy
Workforce Skills Analysis

Introduction

The Department of Energy (DOE) has over 14,000 Federal employees and over 100,000 contractor employees who manage approximately 50 major installations across the country including world-renowned national laboratories that have a capital value of over $45 billion. DOE conducts programs relating to energy resources, national nuclear security, environmental quality, and science. In each of these areas, the Department needs a highly-skilled technical, scientific, professional, and administrative workforce to manage and oversee DOE's $20 billion budget.

DOE's workforce readiness has been highly impacted by Federal employee downsizing experienced since 1995 (27% staffing reduction) as a result of the Department's Strategic Alignment Initiative (SAI) and significant, Congressionally-imposed funding reductions. This downsizing occurred while the DOE mission expanded and became even more complex than in previous years. The current energy situation will place more focus and importance on the programs the Department is responsible for and on the need for replenishing the critical skills that have left DOE over the past five years.

In response to OMB Bulletin 01-07, Workforce Planning and Restructuring, DOE has prepared the following workforce skills analysis. It should be noted that this analysis provides primarily a Department-wide perspective on DOE's workforce skills and needs. Although the skills depletion experienced within the Department over the past five years has affected several mission areas, some DOE organizations have been more severely impacted than others - - especially in technical and scientific program areas where the competition for talent is greatest.

1. What skills are vital to the accomplishment of the agency's goals and objectives?

The skills necessary to accomplish the far-ranging missions of the Department include highly technical, scientific, professional, and administrative capabilities. Operating complex programs, including maintaining the safety, security and reliability of the Nation's nuclear weapons stockpile, clean-up of former nuclear sites, disposal of spent nuclear fuels and radioactive waste, basic research and advanced science, requires a highly talented and dedicated workforce.

Vital and critical skills required to carry out the DOE mission include, but are not limited to:

- **Program management:** to evaluate the effectiveness of DOE programs and projects
- **Safety management:** to develop and oversee complex nuclear, environmental, safety and health programs and to develop policies to ensure a safe environment at DOE facilities
- **Emergency management:** to conduct complex reviews and develop options and recommendations on emergency management policies and programs for DOE organizations
- **Engineering:** (chemical, civil, electrical, general, environmental, nuclear, petroleum, etc.) to conduct complex scientific and technical work and provide oversight and guidance to DOE laboratories and major contractors on complex projects
- **Scientific:** (physical, metallurgical, chemical, biological, geothermal, geological, etc.) to conduct complex scientific and technical work and provide oversight and guidance to DOE laboratories and major contractors on complex projects
- **Project management:** to effectively manage large and complex construction, research, and other projects
- **Contract management:** to manage and oversee large and complex DOE contracts which exceed $18 billion
- **Financial management (including budget expertise):** to develop the DOE budget and policy on fiscal responsibility
- **Professional accounting:** to provide expertise in recording and reporting obligations and costs, asset management, and reporting and controlling headquarters allotments
- **Information and computer technology:** to assess capabilities needed to meet the information technology needs of DOE and to expand electronic government in administrative areas where possible

- **Human resources and training management:** to support strategic management of human capital and to provide consulting expertise on a wide-range of personnel and training programs

- **Procurement/acquisition:** to develop DOE-wide policies, procedures, standards, and systems related to procurement and acquisition management initiatives

- **Computer/cyber security:** to develop effective processes that ensure effective protection of electronic information and computers

- **Nuclear weapons design:** to ensure the latest technology is applied to the development of complex designs for nuclear weapons

- **Strategic planning:** to develop short and long-range strategies for successful program and project accomplishment and accountability

- **Leadership/change management:** to lead, manage, and guide the Department and its complex programs through changes in mission focus. Change management skills will be critical as DOE continues to streamline and re-engineer processes and implement actions to restructure the Department to provide more effective and results-driven methods of operation.

- **Risk analysis:** to develop complex options to assess various risks associated with DOE technical programs and projects

- **Analytical:** to conduct complex analyses of DOE programs and projects including options and viable recommendations

2. What changes are expected in the work of the agency (e.g., due to changes in mission/goals, technology, new/terminated programs or functions, and shifts to contracting out)? How will this affect the agency's human resources? What skills will no longer be required, and what new skills will the agency need in the next five years?

Over the next five years, the Department does not anticipate major changes to its overall mission and work, although there could be some shifts in priorities, especially with the current energy situation. There will be continued emphasis on the types of skills identified in response to Question 1 with even more emphasis on program and project management, computer/cyber security, safety management, change management, and analytical skills due to DOE's complex mission.

The demographics discussed in Part I highlight the problems of an aging workforce and the fact that over 30% of the Department's workforce will be eligible for retirement by FY 2005 (and almost 60% will be eligible for early retirement). Although historical trends in attrition, including retirement, suggest that actual retirements will be well below eligibility levels, attrition rates are expected to increase and will have a negative impact on the Department's ability to maintain adequate skills to support various missions. DOE's senior technical employees who are most likely to retire are difficult to replace and the Department has problems competing with the private sector for these technical and scientific skills.

3. What recruitment, training, and retention strategies are being implemented to help ensure that the agency has a high-quality, diverse workforce?

After several years of downsizing, the Department has begun to rebuild its workforce and create a pipeline of skills for the future. As it enters a period where attrition and retirement rates are expected to increase, rebuilding will be more of a challenge.

DOE uses recruitment, relocation and retention bonuses as incentives to attract and retain highly skilled personnel. DOE also utilizes a variety of special hiring authorities including, Excepted Service Authority, OPM Delegated Examining Authority, and the People with Disabilities Program to help attract highly talented and diverse candidates for employment at DOE.

The Department participates in several intern programs including the recently established DOE Technical Intern Program for newly hired technical and scientific employees, the new OPM Career Intern Program, the Presidential Management Intern Program, and other available programs.

The Department engages in recruitment and outreach at over 40 college and university job fairs each year, including many at minority institutions. DOE personnel and program employees are at the job fairs to provide interested candidates with information on DOE programs, employment opportunities and the DOE hiring process.

Several employee development programs are available at all grade levels within the Department to ensure employees are properly developed for more responsible jobs. Programs include Aspiring Leader Program (GS 5-7), New Leaders Program (GS 7-11), Executive Leadership Program (GS 11-13), Executive Potential Program (GS 13-15), and the SES Candidate Development Program (GS 14-15). Technology supported learning (over 300 web-based courses on-line) is available for all employees. Several programs are designed to develop and enhance skill sets and competencies which cut across organizational lines, including Acquisition Management, Program Management, Project Management, and many Technical courses. In addition, the Department sponsors various coaching and mentoring programs for lower graded employees to ensure full development of potential. The Department requires all employees, working with their supervisors, to develop Individual Development Plans for future training needs.

The Department has also implemented a wide variety of family-friendly programs such as alternative work schedules, flexiplce, and several initiatives designed to aid employees in career planning and transition. These programs have a positive impact on employee morale and retention. In FY 2000, the Department received the OPM Director's Award for Outstanding Worklife Programs.

A Departmental hiring control process was recently established to ensure that continued hiring is for the most critical skills needed to support Department missions. Entry level and lower graded positions are exempt from the hiring control process to encourage replenishing the pipeline with employees who can become part of DOE's future. In addition, the Department is conducting a Human Capital Summit in

July 2001 to develop a corporate strategy to address skills imbalances in the DOE workforce. The Deputy Secretary, Field Managers, the Chief Financial Officer, Chief Operating Officers, and other high level managers will attend the Summit.

The Department recognized the need to reemphasize the importance of supervisory training and recently implemented a new supervisory training course. Over 300 Headquarters managers and supervisors completed the course this year to refresh their management and learning skills.

The DOE hiring process is being re-engineered to streamline and reduce cycle time for recruiting employees. "DOE QuickHire," an automated system that permits job applicants to view job vacancies and apply on-line, was recently implemented as a result of the re-engineering effort. This system automatically rates, ranks, and certifies job candidates. Top talent is instantly identified and is forwarded to the selecting official electronically. "QuickHire" is expected to reduce the hiring cycle time substantially.

4. How is your agency addressing expected skill imbalances due to attrition, including retirements over the next five years?

Many DOE organizations conduct organizational needs, staffing, and retention analyses to identify and address problem areas. The National Nuclear Security Administration, Bonneville Power Administration, Office of Fossil Energy, Office of Environmental Management, Office of Civilian Radioactive Waste Management, and the Office of Defense Programs are examples of the DOE organizations conducting reviews of this nature.

The Department has used both early retirement and buyout authorities to meet organizational restructuring priorities and to address skills gaps by using the "headroom" these tools create to fill higher priority positions. Over 1,000 employees have accepted buyouts during the past five years which have allowed the Department to mitigate the potentially disruptive effects of reductions-in-force during DOE's major downsizing from 1996-1999.

Assignments under the Intergovernmental Personnel Act (IPA) authority have been used to address skills imbalances in many program offices, including the filling of key scientific, research, and other technical positions. Details and redeployment of employees within programs and between DOE headquarters and field offices have also been used to address skills imbalances.

In addition, several DOE program offices have initiated programs to develop and train employees in specific areas. Some examples include:

- The Office of Procurement and Assistance Management is sponsoring a series of training initiatives for DOE procurement staffs on a nationwide basis to ensure all acquisition employees are trained and certified in their respective fields.

- The Chief Information Officer has developed a Collaborative Information Technology (IT) Opportunities website which allows DOE Federal and contractor employees to identify and apply for diverse IT opportunities throughout DOE.

- The Oak Ridge Operations Office has developed a Fellowship Program to provide competitively selected employees an opportunity to obtain an advanced degree to meet the technical, professional, and leadership challenges associated with their mission.

Many DOE organizations have converted secretaries to program assistants and administrative specialists to recognize the changing role of clerical/secretarial work and provide these employees with an opportunity for more advancement.

DOE has begun to utilize the Internet for posting job announcements to keep pace with the private sector which makes wide use of this capability. There have been some recent recruitment successes using this medium.

5. What challenges impede your ability to recruit and retain a high-quality, diverse workforce?

The Department faces many challenges in recruiting and retaining a high quality workforce and these challenges are similar to those facing many other agencies. One of the most serious problems today is the rigid structure of the Federal pay and benefits system. In many cases, the commercial sector is able to provide higher starting salaries as well as superior overall benefits packages, including sizable signing bonuses. Although the current economic problems may provide some limited relief for the Federal sector, without more flexible systems, the longer-term outlook for recruiting sufficient technical skills appears very challenging. With the possibility of a large exodus of employees due to retirement (30-50% eligible) over the next five years, especially in the technical and scientific disciplines, Federal agencies need greater flexibility in hiring tools and pay systems. The General Accounting Office has identified human capital management as a serious concern and DOE has identified this as a major challenge in its FY 2000 Performance and Accountability Report. The Department will hold a Human Capital Management Summit in July 2001 which will begin a concerted process of developing strategies for identifying skill needs, developing succession plans, undertaking corporate recruitment and hiring initiatives, and, using career development and compensation plans targeted to attract and retain employees with critical skills needed by the Department in the future.

A further challenge to DOE's ability to recruit and retain a highly qualified and diverse workforce includes the diminishing availability of individuals with the technical knowledge and skills critical to achieving the DOE mission. For example, individuals trained in nuclear engineering have diminished nationwide, and the number of nuclear engineering programs in our colleges and universities are not adequate to replace the shrinking pool of nuclear engineering students. The strong competition with the private sector and other Federal agencies for this talent compounds the challenge. In addition, limited diversity within technical skills pools in some disciplines contribute to the Department's challenge to maintain a diverse workforce.

Other challenges include the lack of on-the-spot hiring authority (except for the new OPM Career Intern Program and some other limited programs) which has resulted in DOE losing out on highly skilled employees to the private sector since it sometimes takes several months for an employee to be hired. As noted above, the Department has recently implemented a new automated recruitment system - - "QuickHire" to help streamline the hiring process. The OPM "rule of three" restricts selection of candidates from a list and at times is a substantial barrier to selecting the best candidates. Many DOE programs require a security clearance which may take 6-12 months to complete and in some cases is needed prior to employment with DOE.

As mentioned above, the Federal pay system and disparity with the private sector (especially for scientific, technical, information technology, and legal positions) is a challenge and the need for broad-banding pay systems is an option that needs to be made available to all agencies. This type of system provides a number of benefits since it has been tested through a number of demonstration projects, offers more flexibility in setting pay for employees, reduces classification workload, and can be more

effectively used for pay for performance initiatives.

Although the Department has been provided some recruitment, retention, and relocation bonus authorities, OPM needs to expand these authorities to permit agencies more flexibility when they are seeking to hire and retain the best and the brightest.

Reduction-in-force (RIF) rules are complex and difficult to administer. Also, they do not always permit the most productive or needed performers to be retained because of the emphasis on length of service and the type of Federal appointment of the employee.

Expertise in nuclear engineering, including dismantling the Nation's nuclear arsenal, cyber security, and other highly technical and scientific areas, central to the Department's mission, are difficult skills to find. Many of the above challenges place the Department and other agencies at a disadvantage with the private sector in attracting a highly skilled and diverse workforce.

6. Where has the agency successfully delegated authority or restructured to reduce the number of layers that a programmatic action passes through before it reaches an authoritative decision point (e.g., procuring new computers, allocating operating budgets, completely satisfying a customer's complaint, processing a benefits claim, and clearing a controlled correspondence)? Where can the agency improve its processes to reduce the number of layers that a programmatic action passes through before it reaches an authoritative decision point?

During the downsizing initiative, the number of management layers within Departmental organizations was reduced through the elimination of the Branch level structure and elimination of some Deputy Director positions. Since 1995 the Department has improved its employee to supervisor ratio from 4.2 to 1 to the current level of 8.1 to1. The Department will continue to review the structures of its major elements to create more opportunities to reduce the number of management layers and to place more employees on the "front lines."

In early 1999, the Department initiated a Management Review of headquarters and field relationships to identify opportunities for clarifying and improving roles and responsibilities, authorities, accountability and reporting. The major change implemented included establishment of a Lead Program Secretarial Office concept for field office reporting to facilitate decision-making by placing responsibility and accountability in the headquarters Program Offices for the field sites they oversee. In addition, a Field Management Council was created as a forum for Departmental policy review, coordination, decision-making, issue resolution, and reduction of duplication of data calls to the field. The FMC review and decision-making process has resulted in faster resolution of many corporate issues.

The Department recently completed a review of all major delegations of authority to ensure that authorities have been delegated to the lowest possible levels. The current system of delegations of authority has been updated and is maintained on a DOE website.

Several DOE organizations have implemented programs to streamline operations. For example, the Bonneville Power Administration adopted a business model for operations which resulted in more decision-making authority in the hands of the program implementers as opposed to program managers.

The Office of the Chief Information Officer makes major computer purchases for the Department, reducing overall computer equipment costs and reducing cycle-time for purchases.

The Office of Management and Administration has decentralized several Department-wide training, personnel, and travel authorities that provide flexibility in hiring, employee development, and employee recognition at DOE work-sites.

A new Corporate Human Resources Information System (CHRIS) was recently implemented that provides state-of-the-art human resource, benefits, payroll and time and labor business practices and related information for the Department of Energy. Over 40% of existing payroll documents are now processed online. In addition, CHRIS includes an Employee Self Service module which is an

automated web-based system to enable DOE Federal employees to use the Internet to view and/or update personal, payroll, and training information. Implementation of these systems has streamlined many processes and permits employees to make changes directly without going through numerous management layers. Approximately 80% of DOE Federal employees have accessed this still relatively new system.

The Office of Procurement and Assistance Management has taken steps to maximize the use of electronic commerce systems and has placed greater emphasis on migrating transactions to electronic applications. There has been a 234% transactional increase from FY 1999 to FY 2000 in the number of large purchasing actions completed electronically, and a corresponding increase of 209% in the number of small purchasing actions. In terms of dollars, award totals resulting from electronic transactions are estimated to have increased from $7 million to $388 million for large purchases, and from $1.9 million to $ 7 million for small purchases.

The Chief Financial Officer implemented Travel Manager, an automated travel authorization and travel voucher processing system. This system enables DOE employees to prepare travel authorizations and travel vouchers on their computers and forward them electronically to the accounting system through their approval officials. Travel Manager has eliminated the need to forward paper copies and has reduced cycle times and processing costs substantially.

By taking advantage of technology, the Department will continue to seek ways to improve efficiency and reduce costs via the automation of administrative and management systems.

7. What barriers (statutory, administrative, physical, or cultural) has the agency identified to achieve workforce restructuring?

The numerous challenges the Department faces in workforce planning and restructuring are discussed in several questions above. The overly rigid structure of Federal pay and benefits, the large number of potential retirements, lack of on-the-spot hiring authority for most entry-level DOE jobs, excessive time frames for the hiring process, lost time waiting for security clearances, and numerous compliance regulations that do not permit long-range planning are the types of barriers that must be addressed and solved if DOE is to be successful in achieving workforce planning and restructuring. These types of barriers must not only be addressed by the Department, but by the Administration and the Congress since almost every Federal agency is experiencing similar problems.

Another barrier is a lack of experience and expertise in conducting and implementing workforce planning in the Federal sector. Skills needs assessments, succession planning, and the development of human resources capabilities in the highly dynamic and fluid Federal employment environment present particular challenges that will require a great deal of effort in the months and years ahead.